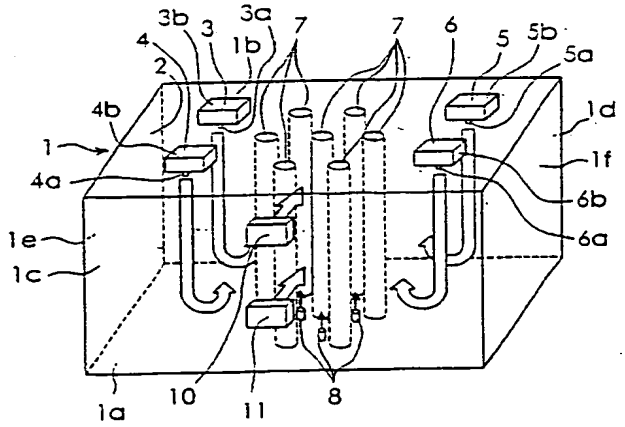
(54) Title: REACTOR COMBUSTION CONTROL METHOD AND REACTOR



(57) **Abstract:** A reactor combustion control method using a high temperature air combustion technology capable of reducing a temperature difference in a reactor without producing cracking and caulking in reaction tubes and the reactor controlled by using the method, the reactor wherein second burners (8) are disposed in a space formed between two or more reaction tubes (7) adjacent to each other so as to inject fuel in the extending direction of the reaction tubes (7), and partial combustion air feeding devices (10) and (11) for the second burners discharging exhaust gas in a combustion chamber (2) to the outside of the reactor through a permeable heat reservoir and feeding combustion air heated to a high temperature by the latent heat of the heat reservoir to the second burners (8) are installed; the method comprising the steps of raising the temperature in the reactor by the combustion of only the first burners (3a) to (6a) until the inside of a reactor body (1) is brought into a high temperature air combustion state, starting the combustion of the second burners (8) after the inside of the reactor body (1) is brought into the high temperature air combustion state, and decreasing the amount of combustion of the plurality of first burners (3a) to (6a) according an increase in combustion amount of the second burners (8), whereby a necessary combustion state can be provided.